



Chapter Seven

Financial Analysis and Constraint





Financial Analysis

The Bay City Area Transportation Study (BCATS) 2035 Metropolitan Transportation Plan is a composition of the significant transportation system improvements scheduled for implementation in the urbanized area during the next 28 year time frame. The Plan is updated every five years. The purpose of the Plan is defined by the rules put forth in 23 CFR Part 450 which require state and local governments develop a Plan that is financially constrained and includes a financial plan that demonstrates which projects can be implemented using current revenue sources and which projects are to be implemented using proposed revenue sources, while the existing transportation system is being adequately operated and maintained. A financially constrained Plan will be more meaningful for elected officials and citizens. Once the Plan is financially constrained, it will remove all wishful or unbuildable projects from the documents, thus removing false hope. In other words, Federally-funded expenditures are required by federal law to be consistent with the Metropolitan Transportation Plan and to be constrained to include only projects that we anticipate having enough revenue to complete.

The total investment of state, local, and federal revenue in the Bay City area transportation system for the 28 year period is over 416 million dollars, an average of \$14 million per year. A portion of this money is used to maintain and operate the transportation systems. The remainder is for capital projects. Following goals and objectives as adopted in the BCATS Metropolitan Transportation Plan, expenditures ensure that the system as a whole is being adequately operated and maintained.

The purpose of **table one**, which follows the 2035 Metropolitan Transportation Plan Revenue Estimate Methodology, is to be able to reasonably disperse the estimated funding amounts for the various funding sources which is needed to show financial constraint in table two. It also shows expenditures by program and anticipated funding source as derived by an analysis of the BCATS FY-2006/07/08 Transportation Improvement Program (TIP). The rows show these various funding sources. Federal funding sources are shown by major category (e.g. Interstate Maintenance, National Highway System, Bridge, Congestion Mitigation and Air Quality, and Surface Transportation Program). 'MTF Funds' come from the Michigan Transportation Fund, which receives receipts largely from state fuel taxes and vehicle registration fees and distributes them to MDOT, counties and cities to spend on roads. 'Local/Private Funds' come from a variety of sources, including bonds and millages. The rows in the Transit Programs portion of the table represent Federal Transit Administration Programs. The columns break down program spending into its federal, state and local components.

Table two is to demonstrate financial constraint. The table compares estimated revenues and expenditures by funding source and indicates how much revenue is estimated to be available for fiscal year one (FY 2008), for FY 2011, for FY 2020 and for FY 2035 from federal, state and local



sources. Revenue and expenditures in this table are BCATS totals for combined state and local programs. Federal revenues used here are based on the average funding levels contained in the FY-2006-07-08 TIP.

2035 Metropolitan Transportation Plan Revenue Estimate – Methodology May 2006

The following is a description of the methodology used by MDOT staff to calculate the estimated \$416,058,231 amount of revenue available during the 28 year period of this transportation plan.

1. Highway Revenue Forecast Growth Rate

Statewide Transportation Planning division analyzed historical state highway revenue and federal obligations over a 20-year time period (1985-2004). Analysis calculated separate federal and state annual revenue growth rates at 90 percent of historical growth rates. The result is 4.89 percent annual federal revenue growth rate and 4.04 percent annual state revenue growth rate.

The resulting 2035 total estimated revenue for capital outlay, excluding debt service, non-capital uses, routine maintenance, and deflated by an annual inflation rate of 3.1 percent is \$28.2 billion (in 2005 dollars).

The breakdown of the \$28.2 billion total estimated revenue between preservation and capacity increase/new roads was determined by reviewing the capacity increase/new roads (CI/NR) current Metropolitan Planning Organization (MPO) commitments and pending environmental clearance Record of Decisions. This resulted in total estimated revenue for CI/NR needs of \$4.3 billion. The preservation component of the \$28.2 billion total estimated revenue was determined by subtracting the CI/NR total of \$4.3 billion from the statewide total of \$28.2 billion total, resulting in \$23.9 billion available for preservation needs.

2. Methodology for MPO Allocation of Highway Program Preservation Dollars

For MPOs encompassing complete counties:

- Used monitoring tool called Automated Customizable Reporting System (ACRS) to develop latest completed six year history (2000-2005) of capital program investments (all programs excluding CI/NR, all phases); develop percent by county (county total divided by statewide total)
- Multiply 2035 total estimated revenue for preservation by percentage



- calculated
- Result is 2035 total estimated revenue for preservation for MPO
- Southeast Michigan Council of Governments (SEMCOG) Example: sum of seven county ACRS investments divided by statewide total ACRS investments equals x%, multiply 2035 total estimated revenue by x%, result equals 2035 total estimated revenue for SEMCOG.

For MPOs with boundaries not limited to complete counties:

- Develop trunkline lane mile MPO percent
(Total trunkline lane miles within MPO divided by county total).
- Multiply resulting percent by county total ACRS investments for MPO ACRS investments.
- Calculate MPO 2035 estimated total revenue for preservation by dividing MPO ACRS investments by statewide total ACRS investments for x% and multiplying 2035 total estimated revenue by that percentage.
- Battle Creek Area Transportation Study Example: Calculate MPO trunkline lane miles as percent of Calhoun County trunkline lane miles total. Multiply that resulting lane mile percentage by Calhoun County total ACRS investments for Battle Creek Area Transportation Study MPO investment total. Divide Battle Creek Area Transportation Study MPO investment total by statewide ACRS total investment for x%. Multiply 2035 total estimated revenue by that percentage resulting in 2035 total estimated revenue for Battle Creek Area Transportation Study.

Rural (Non-MPO areas):

- Sum all MPO 2035 total estimated revenue and subtract from the statewide 2035 total estimated revenue for preservation. The difference is what would be allocated to the rural (non-MPO) areas of the state.

3. Methodology for MPO Allocation of Capacity Increase/New Road Dollars
Distribution of the \$4.3 billion of Capacity Increase/New Road (CI/NR) funds throughout Michigan's Metropolitan Planning Organizations was determined by the following three factors: congested vehicle miles traveled (VMT), the location of key 21st Century Jobs, and the percent of population and jobs in Michigan's other economic sectors. A weighting criterion was applied to each of these factors. Congested VMT, which was made up of total congested VMT and freeway congested VMT, was given 40 percent of the weight. The



location of key 21st Century Jobs, which included manufacturing, high-tech, and professional jobs, was given 40 percent of the weight. The remaining 20 percent was applied towards the distribution of population and other jobs such as retail, warehousing, and other economic sectors within each MPO.

The total congested VMT and percent of congested freeway VMT were calculated using data from MDOT's 2004 sufficiency report which was updated to reflect 2005 conditions, using growth rates contained within the statewide travel demand model. This data has been updated significantly from the last round of MPO CI/NR funding distribution. Updates to this data set include:

- Previous analysis utilized 2002 data;
- Previous analysis reviewed at a county level and not an MPO level;
- A change in urban area boundaries completed since 2002;
- An update to the capacity calculator (HCM 2000) in MDOT's sufficiency files completed for the non-freeway congested segments since the last round of analysis; and
- Major CI/NR projects have been or are in the process of being completed which has resulted in lower congested freeway VMT in several MPO areas including, M-6 in Grand Region, I-75 and M-84 widening in Bay Region, and I-94 widening in Kalamazoo.

All private job-related data used for this distribution was obtained from the 2002 U.S. Economic Census, broken out by 2002 NAICS Metropolitan Statistical Areas. All population estimates were obtained from the July 1, 2004 census estimates, broken out by Metropolitan Statistical Area.

(<http://www.census.gov/population/www/estimates/metropop/table01.xls>)



Table 1

BAY CITY

MPO MTP Revenue Estimates - Three Year TIP Averages (2006 - 2008 TIP):

						Total 2035 Projected	
				2006-2008 TIP	% 3-Yr Avg	MPO Funding	% Projected
	2006	2007	2008	3-Yr Average	Hwy Total	\$416,058,231	Hwy Total
HIGHWAY FUNDING							
IM:	\$3,987,902	\$ -	\$13,500,000	\$5,829,301	27%	\$111,350,281	27%
NHS:	\$ -	\$ -	\$ -	\$ -	0%	\$ -	0%
STP(Local):	\$3,737,023	\$3,280,344	\$4,746,598	\$3,921,322	18%	\$74,904,400	18%
STP(MDOT):	\$7,638,421	\$7,638,421	\$11,457,013	\$8,911,285	41%	\$170,221,806	41%
B (Local):	\$419,220	\$427,605	\$436,156	\$427,660	2%	\$8,169,093	2%
B (MDOT):	\$5,196,514	\$ -	\$ -	\$1,732,171	8%	\$33,087,634	8%
CMAQ:	\$ -	\$ -	\$ -	\$ -	0%	\$ -	0%
EB (Formerly MG):	\$ -	\$ -	\$ -	\$ -	0%	\$ -	0%
OTHER FED:	\$864,000	\$104,000	\$760,000	\$576,000	3%	\$11,002,651	3%
OTHER NON-FED:	\$1,150,000	\$ -	\$ -	\$383,333	2%	\$7,322,366	2%
HIGHWAY TOTALS:	\$22,993,080	\$11,450,370	\$30,899,767	\$ 21,781,072	100%	\$416,058,231	100%

						Total 2035 Projected	
				2006-2008 TIP	% 3-Yr Avg	MPO Funding	% Projected
	2006	2007	2008	3-Yr Average	Tran Total	\$	Tran Total
TRANSIT FUNDING							
5307 UZA (Operating):	\$765,183	\$1,402,442	\$843,615	\$1,003,747	35%	\$30,597,000	35%
5307 UZA (Capital):	\$706,000	\$803,442	\$159,000	\$556,147	19%	\$16,952,923	19%
5309 CAPITAL:	\$2,450,000	\$599,000	\$990,000	\$1,346,333	46%	\$41,039,998	46%
5310 ELD/DIS:	\$ -	\$ -	\$ -	\$ -	0%	\$ -	0%
5311 NON-UZA:	\$ -	\$ -	\$ -	\$ -	0%	\$ -	0%
3037 JOBS/REVR:	\$ -	\$ -	\$ -	\$ -	0%	\$ -	0%
NEW FREEDOM:	\$ -	\$ -	\$ -	\$ -	0%	\$ -	0%
LOCAL OP MILLAGE	\$2,094,892	\$2,200,530	\$2,271,091	\$ -	0%	\$ -	\$ -
FAREBOX REVENUE	\$670,393	\$673,800	\$678,300	\$ -	0%	\$ -	\$ -
TRANSIT TOTALS:	\$ 6,686,468	\$ 5,679,214	\$ 4,942,006	\$ 2,906,227	100%	\$ 88,589,922	100%

Notes:

- . Estimated federal revenue is Apportionment (not Obligation Authority).
- . Estimated non-federal revenue includes state and local match and other funds.
- . The FY 2006-2008 TIP reports financial constraint by major federal funding source:
 - STP includes GPAs, Enhancement, and Safety.
 - EB includes Economic Development Category C - Urban Congestion, and Category D - Rural.
 - Other federal funds includes Emergency Relief, High Priority Projects, National Recreational Trails, High Risk Rural Roads, Highway Safety Improvement Program, National Corridor Infrastructure Improvement, Coordinated Border Infrastructure, and Safe Routes to School.
 - Other non-federal funds includes state M programs, Economic Development, Bonds, "Jobs Today," etc.
- . As of December 20, 2006 TIP Listing



**Bay Cy Area Transportation Study (BCATS)
2035 Metropolitan Transportation Plan (MTP)**

**AMENDED REPORT
October 13, 2009**

Table 2

Bay County - Comparison of Estimated Revenue and Expenditures by Funding Source

2035 Metropolitan Transportation Plan

	1 YEAR (FY 2008)	FY 2011	FY 2020	FY 2035
	Estimated Revenue	Estimated Revenue	Estimated Revenue	Estimated Revenue
FEDERAL HIGHWAY FUNDS				
LOCAL JURISDICTION PROGRAMS				
Bridge	\$427,660	\$1,167,013	\$3,792,793	\$8,169,093
Congestion Mitigation & Air Quality	\$0	\$0	\$0	\$0
Other Federal (HPP)	\$576,000	\$1,571,807	\$5,108,374	\$11,002,651
Demos	\$0	\$0	\$0	\$0
Other Allocations	\$0	\$0	\$0	\$0
Recreational Trails	\$0	\$0	\$0	\$0
Surface Transportation Program	\$3,921,322	\$10,700,629	\$34,777,043	\$74,904,400
Minimum Guarantee	\$0	\$0	\$0	\$0
Subtotal Local	\$4,924,982	\$13,439,449	\$43,678,210	\$94,076,144
MDOT PROGRAMS				
Interstate Maintenance	\$5,829,301	\$15,907,183	\$51,698,345	\$111,350,281
National Highway System	\$0	\$0	\$0	\$0
Bridge	\$1,732,171	\$4,726,805	\$15,362,116	\$33,087,634
Congestion Mitigation & Air Quality	\$0	\$0	\$0	\$0
High Priority Projects	\$0	\$0	\$0	\$0
Demos	\$0	\$0	\$0	\$0
Other Non Federal	\$383,333	\$1,046,052	\$3,399,670	\$7,322,366
Recreational Trails	\$0	\$0	\$0	\$0
Surface Transportation Program	\$8,911,285	\$24,317,401	\$79,031,553	\$170,221,806
Minimum Guarantee	\$0	\$0	\$0	\$0
Subtotal MDOT	\$16,856,090	\$45,997,441	\$149,491,683	\$321,982,087
TOTAL FEDERAL HIGHWAY	\$21,781,072	\$59,436,890	\$193,169,893	\$416,058,231
FEDERAL TRANSIT FUNDS				
Section 5311 Intercity	\$0	\$0	\$0	\$0
Section 5311 Operation	\$0	\$0	\$0	\$0
Section 5311 Training	\$0	\$0	\$0	\$0
Section 5307 Capital	\$556,147	\$2,421,846	\$7,871,000	\$16,952,923
Section 5307 Operating	\$1,003,747	\$4,371,000	\$14,205,750	\$30,597,000
Section 5309 Capital	\$1,346,333	\$5,862,857	\$19,054,285	\$41,039,998
Section 5310 Capital	\$0	\$0	\$0	\$0
Federal Allocations	\$0	\$0	\$0	\$0
TOTAL FEDERAL TRANSIT	\$2,906,227	\$12,655,703	\$41,131,035	\$88,589,921
STATE-RAISED FUNDS (Mich Trans Fund)				
Local Program Fund	\$10,254,131	\$41,016,524	\$133,303,703	\$287,115,668
Subtotal MTF	\$360,859	\$1,443,436	\$4,691,167	\$10,104,052
	\$10,614,990	\$42,459,960	\$137,994,870	\$297,219,720
LOCAL/PRIVATE FUNDS				
Transit Local Operating Millage	\$0	\$0	\$0	\$0
Transit Farebox Revenue	\$2,188,837	\$8,755,348	\$28,454,881	\$61,287,436
Operations & Maintenance	\$674,164	\$2,696,656	\$8,764,132	\$18,876,592
Subtotal Local	\$0	\$0	\$0	\$0
	\$2,863,001	\$11,452,004	\$37,219,013	\$80,164,028
GRAND TOTAL	\$38,165,290	\$126,004,557	\$409,514,811	\$882,031,900
SUMMARY				
Total Funds Available			\$882,031,900	
Operation and Maintenance Costs (5307 Operating Funds + MTF)			<u>\$327,816,720</u>	
Funds Available for Capital Projects			\$554,215,180	
Metropolitan Transportation Plan Project Costs			<u>\$133,603,000</u>	
Available for Unassigned Preservation & Maintenance Projects			\$420,612,180	

The 2035 Metropolitan Transportation Plan is financially feasible.

Note: Revenue Est. were derived in corporation with MDOT, BCATS, and the local implementing agencies.



Although the plan is fiscally constrained, numerous transportation projects, mainly preservation and maintenance in nature, not currently identified by the BCATS implementing agencies will fully utilize any and all existing dollars to maintain the existing BCATS transportation system. The implementing agencies, with tighter and tighter budgets, find it difficult to match existing federal and state road construction funding. Without additional funding sources or increases to the existing funding sources improvements to the BCATS transportation network sufficient to maintain the system at its existing maintenance level will become more and more difficult to achieve.

Following is a brief description of the programs listed in the preceding table.

Highway Funding Programs include:

- **Interstate Maintenance (IM)** - IM funds are used for the maintenance of the national Interstate Highway system. Within the BCATS area, that include 7 miles of I-75.
- **Surface Transportation Program (STP)** - STP is used by state and local jurisdictions for road and transit projects. Local projects are eligible for funding from the annual allocation of STP Funds to the Metropolitan Planning Organization (MPO). Road projects must be located on roads functionally classified as a rural major collector or higher. Ten percent of the STP fund is set aside for the Transportation Enhancement fund program. The remaining funds are used statewide or distributed to the MPO for use in the urbanized areas (STPU), rural areas (STPR), and small cities in rural areas with a population of 5,000 to 50,000 people (STP-Small Urban). This funding category also includes:
 - **STP-Enhancement** - Ten percent of Michigan's STP funding is set aside for Transportation Enhancement Activities (STPE). These monies are designated specifically for the enhancement of the intermodal transportation network on projects such as landscaping, installing bicycle paths, historic preservation and mitigation of storm water run-off. Once these projects are selected they will be amended into the Transportation Improvement Program.
- **STP-Safety** - SAFETEA-LU represents a change in the way STP-Safety funds are distributed as previous legislation (TEA-21) allocated ten percent of STP funds for local safety projects statewide. The Safety program (STP-S), which is now a stand alone program, allows for items such as upgrading traffic signs and signals, replacement of guardrail or eliminating the need for guardrail, replacement of bridge railing and approach guardrail, removing roadside obstacles, and small intersection improvements.
- **Local Bridge Program (B)**- the Critical Bridge Program is established in state law with a state grant from the Michigan Transportation Fund (MTF). Federal Bridge funds that may



only be spent off the federal aid system and federal STP funds are also part of the program.

- **Congestion Mitigation & Air Quality Program (CMAQ)** - the CMAQ program is federal program with the purpose of helping states meet the requirements of the federal Clean Air Act. Grants are made based on applications from state and local agencies
- **EB** - Includes Economic Development Category C - Urban Congestion and Category D - Rural
 - **Transportation Economic Development Fund, Category C Program** - the TEDF-C program is established in state law with a set aside of state and federal (Minimum Guarantee) funds for urban county congestion relief. The recipients include Kent, Genesee, Macomb, Oakland, and Wayne counties.
- **Other Federal (HPP)** - Funding dedicated to specific High Priority Projects as listing in the transportation bill SAFETEA-LU.
- **Other Non-Federal** - Includes state 'M' programs, Economic Development, Bonds, and "Jobs Today" funds
- **Recreational Trails Program** - the Recreational Trails program is a federal program for the purpose of providing improvements for motorized and non-motorized recreational trail users.
- **Local Rail/Highway Crossing Program** - the rail crossing program is funded with a statutory set aside of state and federal funds for the purpose of improving safety at rail/highway crossings.
- **State Park Access Program** - the SPA program is a non-mandatory set aside of federal STP funds for the purpose of improving local roads that serve state parks.
- **Federal Allocations** - federal allocations include the congressionally-designated High Priority Projects of TEA21 and Demonstration projects of pre-TEA21 authorizations, as well as funds passed out at the discretion of the U. S. Secretary of Transportation. These funds are typically provide for a very specific project or use. The federal discretionary projects are often not know until during the fiscal year in which they are received and may need to be amended into the TIP when they are known.

Transit Funding Programs Include:

- **5307 UZA (Operating)** - Formula grant program for urbanized areas over 50,000 in



population. Funds are apportioned to urbanized areas utilizing a formula based on population, population density, and other factors associated with transit service and ridership, dedicated for operation.

- **5307 UZA (Capital)** - Formula grant program for urbanized areas over 50,000 in population. Funds are apportioned to urbanized areas utilizing a formula based on population, population density, and other factors associated with transit service and ridership, dedicated for capital improvements.
- **5309 Capital** - (New Starts, Bus & Bus Facilities): Provides discretionary capital assistance for the establishment and improvement of busways systems and upgrading of bus systems (buses, bus related equipment, and facilities).
- **5310 ELD/DIS** - This program provides capital funds for transportation purposes to private, nonprofit corporations and associations, and public agencies for the specific purpose of assisting them in providing transportation services meeting the special needs of elderly persons and persons with disabilities. Public agencies are eligible to receive funding under this program if they have been approved by the state to coordinate services for elderly persons and persons with disabilities, and if they certify to the state that no non-profit corporations or associations are readily available in the area to provide service. Capital expenses may include vehicles, maintenance equipment, computers and communication equipment.
- **5311 Non-UZA** - This is a formula assistance program used to provide federal funding to all legal bodies that provide general public transportation non-urbanized areas of the state. Funds may be used of capital, operating, and administrative assistance.
- **Local Op. Millage** - Revenue generated from a 0.75 mill property tax levy which is renewable every 5 years (last renewed in November 2004) within the County of Bay
- **Farebox Revenue** - Funds received from BTMA passengers on fixed route and Dial-A-Rail services

Non-Federal Programs

Note: The local road safety program, which is funded with a set aside of federal STP funds, is not included in the tables because projects were not selected in time to be included. These projects address immediate safety needs and are not selected very far in advance. These projects will be amended into the TIP once they are selected.



The state trunkline is nearly 10,000 miles of the most heavily traveled roads in the state. They are all funded from the pool of state and federal funds available to the MDOT for care of the state trunkline system. State Trunkline programs include,

- **Rehabilitate and Reconstruct Program** - the R & R program's purpose is to improve the condition and ride quality of pavements on the system.
- **Trunkline Bridge Program** - the bridge program provides for the inventory, inspection, analysis and emergency repair of trunkline bridges.
- **Capital Preventive Maintenance Program for Highways and Bridges** - the CPM program's purpose is to extend the life of pavement and prevent costly repairs in the future.
- **Passing Relief Lanes** - the program adds passing lanes on two lane trunklines with limited passing sight distance in northern Michigan.
- **Capacity Improvements** - capacity improvements include the widening and resurfacing or reconstructing of roads with the purpose of relieving urban congestion and improving service along the most important commercial thoroughfares.
- **Preliminary Engineering** - PE includes funding for preliminary studies, surveys, drafting, and engineering work necessary to begin the development of road projects.
- **Highway Safety Program** - The highway safety program is funded with a set aside of federal STP funds.
- **State Rail/Highway Crossing Program** - the rail crossing program is funded with a statutory set aside of state and federal funds for the purpose of improving safety at rail/highway crossings.
- **Weigh Stations Program** - the Weigh Stations program funds improvements to truck weigh stations on the trunkline system.
- **Roadsides Program** - the Roadsides program provide funding for landscaping, rest area, and non-motorized facilities.
- **Sewer Separations Program** - the Sewer Separations program funds the MDOT participation in local sewer separation projects.
- **Federal Allocations** - federal allocations include the congressionally-designated High



Priority Projects of TEA21 and Demonstration projects of pre-TEA21 authorizations, as well as funds passed out at the discretion of the U. S. Secretary of Transportation. These funds are typically provide for a very specific project or use. The federal discretionary projects are often not know until during the fiscal year in which they are received and may need to be amended into the TIP when they are known.